structure generally adjacent to an engine tail cone **50** and within the outer engine case structure **42** to direct the engine core flow.

Air which enters the fan section **22** is divided between a core flow through the core flow path **48** and a secondary flow through the secondary flow path **46**. The core flow passes through the combustor section **26**, the turbine section **28**, then the augmentor section **30** where fuel may be selectively injected and burned to generate additional thrust through the exhaust liner section **32** and the exhaust liner **16**. The secondary flow may be utilized for a multiple of purposes to include, for example, cooling and pressurization. The secondary flow as defined herein is any flow different from the primary combustion gas exhaust core flow.

The outer engine case structure **42** is mounted to the outer exhaust duct **32**D via a removable or retractable exhaust duct segment **32**Ds via, for example, V-band clamps **33** due to delta pressures an order of magnitude higher than the inner engine structure **44** and the exhaust liner **16**. The exhaust duct segment **32**Ds may be a split circumferentially in one or more places. That is, the duct segment **32**Ds, in one disclosed non-limiting embodiment, includes a cylindrical member defined by a multiple of segments. It should be appreciated that rubber reinforced bellows or other seals may be utilized to permit some relative motion, yet still seal the exhaust duct segment **32**Ds between the outer engine case structure **42** and the outer exhaust duct **32**D. Once unclamped the bellows may be readily forced away for interior access to the exhaust liner segment **18**. That is, the duct segment **32**D provides a seal for the secondary flow and generally axially extends along a travel range of the retractable exhaust liner segment **18** (FIG. **3**).

The inner engine structure **44** is mounted to the exhaust liner **16** through the retractable exhaust liner segment **18** which may be loosened and then axially telescoped over either the inner engine structure **44** or the exhaust liner **16** along the axis A after removal or retraction of the duct segment **32**D (FIG. **3**). The retractable exhaust liner segment **18**, in one disclosed non-limiting embodiment, provides clearance for the tail cone **50** for a straight vertical engine installation/removal movement transverse to the axis A (FIG. **4**).

With reference to FIG. **5**, the retractable exhaust liner segment **18** may be a split ring that is split circumferentially in one or more places (two segments **18**A, **18**B shown). That is, the retractable exhaust liner section **18** is essentially a cylindrical member defined by a multiple of segments.

A flange **52** is located at the interface of each segment **18**A, **18**B to define one or more fastener apertures **54** (FIG. **6**). Each flange **52** may be further supported by a gusset **56** to receive a fastener assembly **58** such as a nut and bolt through the apertures **54**. It should be appreciated that although two flanges **52** are illustrated for each segment **18**A, **18**B at a **180** degree displacement, it should be appreciate that only a single flange **52** may be utilized with radial flexing of the retractable exhaust liner segment **18** permitting movement thereof.

The retractable exhaust liner segment **18** may be manufactured of a nickel alloy base structure and a liner surface **60** coated with a high temperature ceramic material. It should be understood that any type of liner system such as a dual wall, single wall, cooled or uncooled will benefit herefrom. In another disclosed, non-limiting embodiment, the liner surface **60** defines a lap joint **62** adjacent to the interface between the segments **18**A', **18**B' (FIG. **8**). The lap joint **62** further insulates the interface.

The retractable exhaust liner segment **18** includes a locating feature **64**. The locating feature **64** may be an indentation or other undulation to axially index the retractable exhaust liner segment **18** with respect to the inner engine structure **44** and the exhaust liner **16**. In another disclosed, non-limiting embodiment, the locating feature **64'** defines a step surface **66** which provides an inner surface **68** which is generally parallel to the inner surfaces of the inner engine structure **44** and the exhaust liner **16** (FIG. **10**).

With reference to FIG. **11**, another disclosed, non-limiting embodiment, includes a flange **70** that supports one or more captured fastener assemblies **72**. Each captured fastener assembly **72** includes a T-Bolt **74** which is retained within one segment **18**A' by a retainer **76**. That is, the T-bolt **74** is pivotally retained within segment **18**A'. Segment **18**A' includes a slot **78** (FIG. **12**) such that a nut **80** need only be loosened along the T-Bolt **74** then the T-bolt **74** pivoted along a bolt axis B through an open slot **82** in segment **18**W' (FIG. **13**) to assemble/disassemble segment **18**B" from segment **18**A" without any other separate components. This facilitates the reduction of Foreign Objet Damage (FOD).

With the best mode for carrying out the invention and the operation thereof having been described, certain additional features and benefits of the invention can now be more readily appreciated. For example, the retractable exhaust liner segment **18** facilitates tail cone clearance; provides a relatively uncomplicated design; eliminates seals and facilitates a selectively tight interface to provide backpressure and avoid wear from random vibrations.

It should be understood that relative positional terms such as "forward," "aft," "upper," "lower," "above," "below," and the like are with reference to the normal operational attitude of the vehicle and should not be considered otherwise limiting.

It should also be understood that like reference numerals identify corresponding or similar elements throughout the several drawings. It should also be understood that although a particular component arrangement is disclosed in the illustrated embodiment, other arrangements will benefit herefrom.

Although particular step sequences are shown, described, and claimed, it should be understood that steps may be performed in any order, separated or combined unless otherwise indicated and will still benefit from the present disclosure.

Although the different non-limiting embodiments have specific illustrated components, the embodiments of this invention are not limited to those particular combinations. It is possible to use some of the components or features from any of the non-limiting embodiments in combination with features or components from any of the other non-limiting embodiments.

The foregoing description is exemplary rather than defined by the limitations within. Various non-limiting embodiments are disclosed herein, however, one of ordinary skill in the art would recognize that various modifications and variations in light of the above teachings will fall within the scope of the appended claims. It is therefore to be understood that within the scope of the appended claims, the disclosure may be practiced other than as specifically described. For that reason the appended claims should be studied to determine true scope and content.

What is claimed is:

1. A retractable exhaust liner segment comprising:

a first retractable exhaust liner segment which defines a first flange;

a second retractable exhaust liner segment which defines a second flange;